



## B. Overview of the Stock Assessment Process: From data to model to report

### Summary

The Northwest and Southwest Fisheries Science Centers (NWFSC and SWFSC) conduct groundfish stock assessments on a biennial basis, to support the management cycle employed by the Pacific Fishery Management Council (PFMC). Peer reviews of stock assessments, both internal and external, occur as part of the assessment cycle, prior to approval by the PFMC. The PFMC uses assessment results for setting harvest specifications for the two years that follow the assessment cycle.

The Terms of Reference (TORs) for the stock assessment and review (STAR) process are adopted by the PFMC, based on recommendations from the NMFS, the PFMC's Scientific and Statistical Committee (SSC) and advisory groups, as well as the public in advance of the assessment cycle. The TORs are intended to provide the guidelines and procedures for the STAR process and clarify expectations and responsibilities of the various participants. The TORs provide a detailed list of components required in assessment documents to ensure that assessments meet national and regional standards. They also provide a template for an executive summary which addresses major components of the assessment and to be included in all stock assessments.

There are four distinct types of assessments, which include the benchmark assessment (also referred to as "full" assessment), update assessment, data-moderate assessment and data-poor assessment. There is also another assessment product, which is a catch report. Assessment authors are given assignments for their assessments in October of a non-assessment year (even year of biennial cycle). The assessment process includes several major components, such as researching the species, preparing and assembling the data, building the assessment model and evaluating uncertainty in model results, writing the assessment document, preparing for the peer review and revising the document based on review recommendations.

A benchmark assessment takes approximately eight to twelve months to complete from the researching the species to finalizing the post-review assessment document. Update and data-moderate assessments as well as catch reports require less time. Timelines of benchmark and update assessment processes are illustrated in Figure 1 and Figure 2, respectively. A chart illustrating the absolute and proportional amounts of time spent on different component tasks in different assessment types is provided in Figure 3.

The authors assemble data from a variety of sources. They work with state agencies, the Pacific Fisheries Information Network (PacFIN), the Recreational Fisheries Information Network (RecFIN) and other organizations to obtain the most accurate and up to date information. The authors also keep in touch with their designated representatives of PFMC's Groundfish Management Team (GMT) and Groundfish Advisory Panel (GAP) to insure that all available fishery data are evaluated for the assessment.

Technical issues which encompass the majority of assessments are discussed weekly at assessment team meetings, to frame consistent practices to use across assessments. Consistent approaches are also used in preliminary analysis of data utilized across assessments (e.g. NMFS survey data). This allows authors to focus their expertise on specific issues of their assessments.

Internal review of the benchmark and data-moderate assessments occurs three weeks prior to the STAR panel meeting. It is conducted by both NMFS and PFMC staff to ensure that each assessment comports with the TORs. Assessments and supporting background materials are disseminated for peer review two weeks prior to the STAR panel meetings (which occur between late-April and early-August) by posting materials on a publicly accessible ftp site. The STAR panel conducts a technical review of each assessment; the panel typically consists of four reviewers, two of which are from the Center for Independent Experts (CIE).

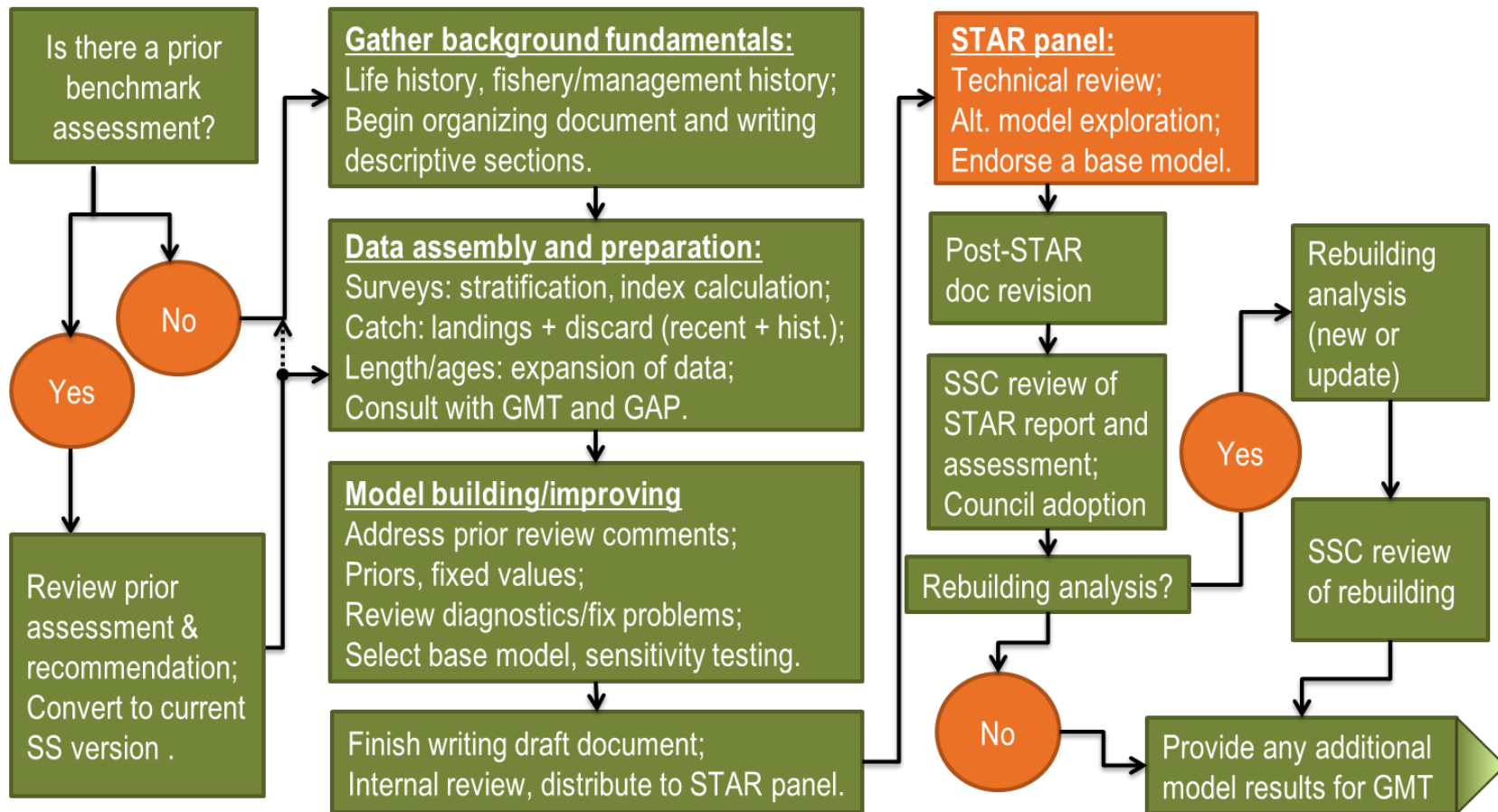
Following the STAR panel meeting, the assessment document is updated to reflect the STAR panel recommendations, as appropriate. When changes to the base model are made during the STAR panel review, the document is revised to describe these changes; tables and figures are also updated to reflect new base model. The revised document is then forwarded to the SSC that reviews both assessment document and STAR panel report and makes recommendation for the PFMC. After the PFMC adopts the assessment, the assessment document and STAR panel report are published on the PFMC's website.

Update assessments as well as data-poor assessments and catch reports are subject to different review procedures. Internal reviews of these assessment products are also conducted to ensure that each assessment is meeting the TORs. However, the technical review is conducted by the SSC alone (and not the STAR panel).

During a non-assessment year of the biennial cycle, assessment authors conduct research to improve future assessments and address reviewers' longer-term comments and recommendations. When technical issues arise which involve the majority of assessments, working groups are often established to address these issues; such groups may include experts from outside the assessment team. Findings obtained during non-assessment years contribute to generating "best practices" that are often employed later across assessments.



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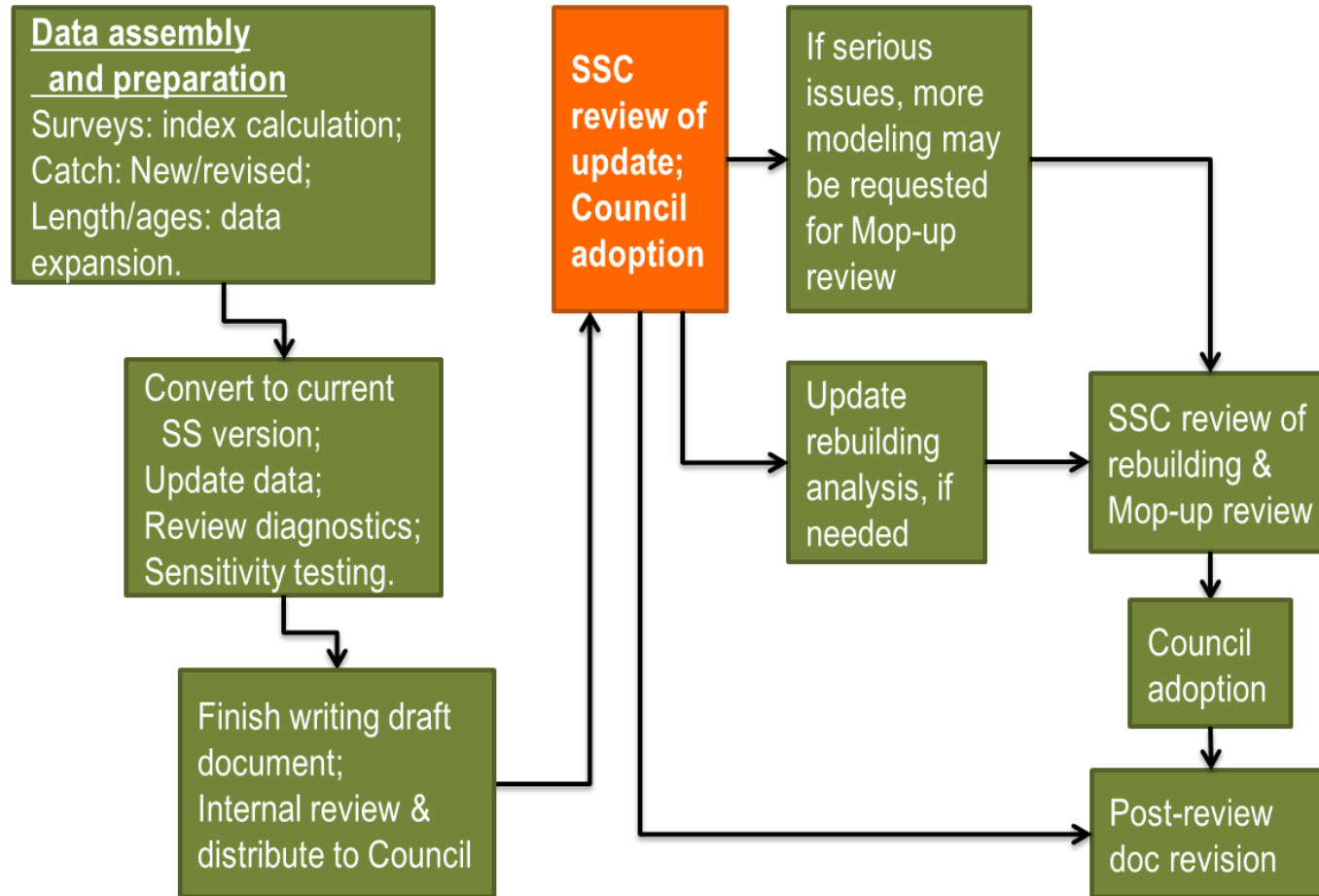


**Figure 1.** Flowchart illustrating a **benchmark assessment** timeline, tasks and process.

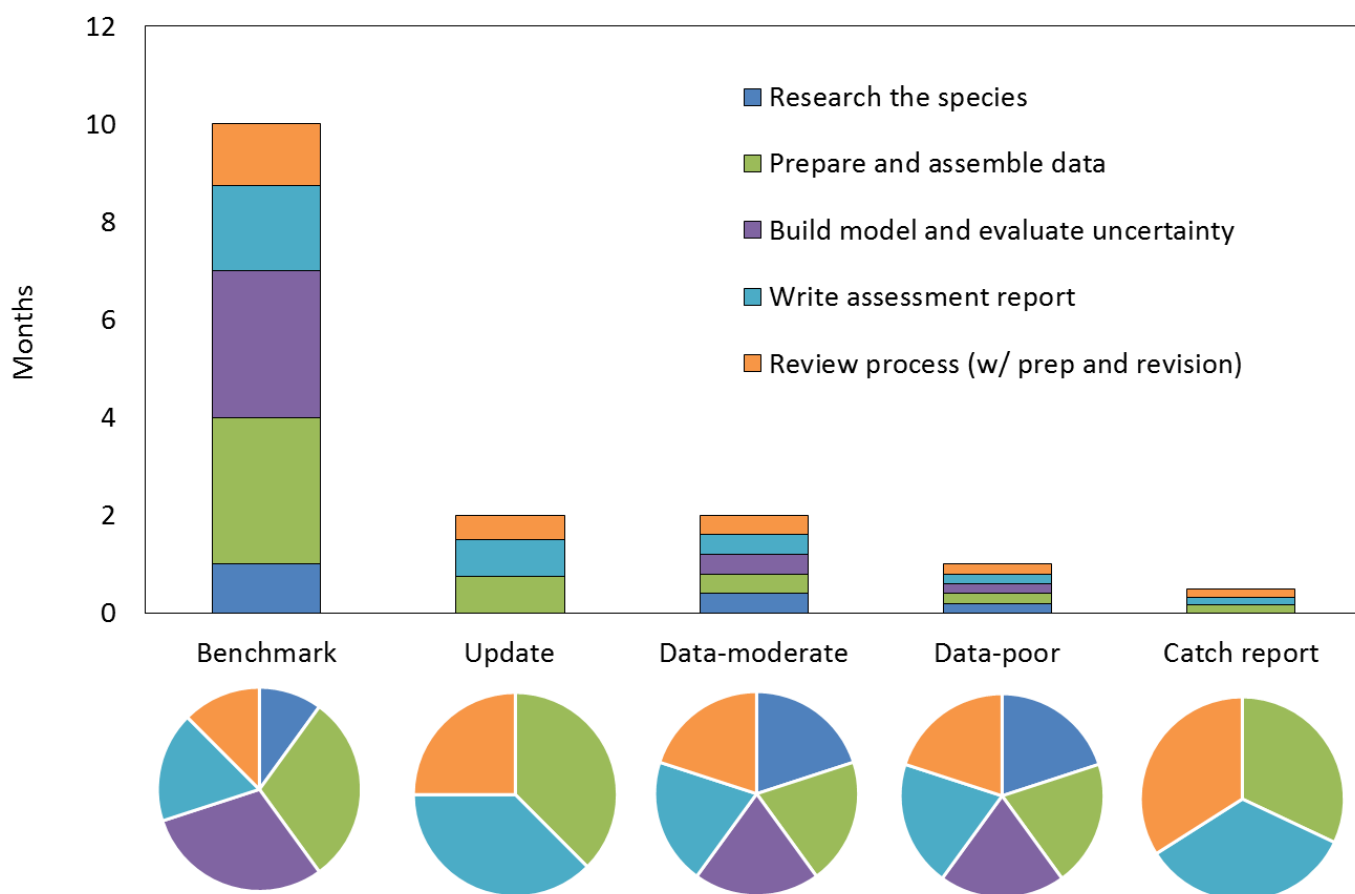


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**Figure 2.** Flowchart illustrating an **update assessment** timeline, tasks and process.



**Figure 3.** Assessment time spent on component tasks by different assessment types.